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ON ASTRONOMICAL CIPHER CODES.

To the Secretary of the Astronomical Society of the Pacific :

In your *Publications*, No. 48, Professor E. S. HOLDEN contributes an article entitled, "Telegraphic Announcements of Astronomical Discoveries, Etc., in America." A portion of this article is historical, and another part describes the Science Observer code, with some ideas advanced by the author about the proper form of code.

It seems unnecessary to comment on the criticisms on the code, for these may be, after all, matters of opinion merely; but, since I am the person who made the bit of history which is reviewed, I claim the right to correct, through your columns, the version which has been given by Professor HOLDEN, and to set forth the real relations between Dr. CHANDLER and myself, and the telegraphic transmission of astronomical information in this country. These relations are obscured in Professor HOLDEN's article. The story has already been set forth, first, briefly in the preface to the code (a source from which Professor HOLDEN drew some of his facts), and more at length in an article signed by me in the *Astronomical Journal* of March 23, 1888. This latter article is so clear and plain that there is only need of making a direct quotation from it.

The article in the *Astronomical Journal* announces the issue of the Science Observer code, and gives a brief history of the experimenting with the provisional code-book.

"In 1882," it goes on to say, "upon the formation of a European association of astronomers for announcements and for collection of news of astronomical discoveries, Dr. KRUEGER expressed a wish that the originators of the code [Dr. CHANDLER and I] would act as the center for the United States; and, shortly afterwards, Professor BAIRD, Superintendent of the Smithsonian Institution, tendered to Mr. CHANDLER and myself the department of international exchange of astronomical information. We felt, however, that in undertaking the work it could be most conveniently carried on by securing the co-operation of some established observatory. The reasons are obvious; and, among them, the aid which the instrumental equipment would afford. The nearness of Harvard College Observatory, together with the fact that Mr. CHANDLER had meanwhile become, and then was,

associated with it, made it the institution most naturally to be looked to for collaboration. Professor PICKERING, who had become interested in the project, kindly tendered the co-operation of the observatory; and, in default of any formal association of American observatories, like that then just formed in Europe, offered to defray the expense of cable messages relating to announcements of American discoveries. This offer of its influence and financial assistance was cheerfully accepted, and is gratefully acknowledged.

“To facilitate some necessary business arrangements, especially with the telegraph companies, which would more readily treat with the representative of an institution than with an individual, Professor PICKERING suggested the addition of my name to the staff of the observatory. The appointment being nominal and without compensation, I saw no objection to accepting.

“Meanwhile, as an undertaking intimately related to the foregoing, although independent of connection with any observatory in particular, it has been my constant endeavor to make more efficient the service which the circulars were intended to render. To this end, arrangements have been made from time to time with various observatories for the telegraphic interchange of positions of comets, for providing material for those who were willing to undertake orbit-computation, and, in the case of a widely-prevailing storm, for securing positions from observatories out of its range. The hearty encouragement and assistance met with in every direction in these endeavors calls for my sincere thanks.”

To define Dr. CHANDLER's relation to the whole matter more precisely than this article in the *Astronomical Journal* found it necessary to state, I may say that the plan of the code and many of its details were his, together with much advice and practical help in the technical matters connected with the orbits. The selection of the words, the preparation of the volume, the presentation of the plan to astronomers, the business matters relating to the transfer from the Smithsonian Institution, and other details were mine. It should further be said that, having personal acquaintance with Professor BAIRD, these matters were arranged by word of mouth, and, as might be expected in such a case, the formal correspondence, as printed in the Government reports, does not present the story in all its details.

JOHN RITCHIE, JR.